Request for
Statement of Interest/
Statement of Qualifications
[SOI/SOQ]
AMENDMENT #1

to

Perform Designated Studies Leading to
the Development of a Selenium Standard for
the Open Waters of the Great Salt Lake (Gilbert Bay)

Purpose and Intent

The North Davis Sewer District [NDSD] is requesting statements of interest and qualifications from firms/organizations [submitters] to assist the NDSD and the Utah Division of Water Quality with review and collection of data that can be used in the development of a selenium standard for the open waters of the Great Salt Lake (Gilbert Bay). **Statements are due January 18, 2006 by 3:00 PM and should be submitted to William O. Moellmer, Ph.D. of the Utah Division of Water Quality.** Each Statement of Interest/Qualification (SOI/SOQ) based on best professional judgment and contract(s) will be negotiated with the chosen submitter(s). **Each "project" could have its own SOI/SOQ or several "projects" could be lumped into a single SOI/SOQ. Submitter may show interest in one, several or all projects.**

Background Information

As a critical component of the Western Hemispheric Shorebird Reserve Network, the Great Salt Lake and its associated wetlands have long been recognized for their unparalleled value to migratory birds. The protection of water birds and the aquatic organisms in their food chain is a beneficial use for the open water of the Great Salt Lake. The open water of the Great Salt Lake provides a major source of food and on-water resting for certain species of migratory birds. There has been a growing concern by waterfowl managers, scientists and citizen groups that selenium loadings may be causing adverse health and teratogenic effects in specific bird species that feed on the brine shrimp and brine flies from the open waters of the Great Salt Lake. Brine shrimp prefer the moderately sized planktonic chlorophyte, ***Dunaliella sp***. and the smaller diatoms as their primary food sources.

Therefore, these studies are intended to examine issues associated with selenium uptake and bioconcentration to assist the Utah Division of Water Quality to develop a water quality standard for south arm of the Great Salt Lake (Farmington Bay excluded.)

Table. Summary of Projects for studies on the Great Salt Lake leading to a water quality standard for Selenium.

Project	Schedule	Responsible Organization	Methods
Project 1. Determine ambient selenium concentrations in water, brine shrimp, brine flies, and bird eggs. Determine stomach contents of nesting birds.[2006]	Contractor suggestions to timing for this project are requested.	Contractor – To be determined	Coordinated with US Fish &Wildlife Service and Utah DWR. Utilize appropriate procedures.
Project 2. Design and conduct a selenium concentration synoptic surveys in the water and brine shrimp within Gilbert Bay [2006]	Contractor suggestions to timing for this project are requested.	Contractor – To be determined	Utilize Science Panel recommendation of Hydride Generation in hypersaline waters.
Project 3 Determine selenium loadings from point sources and rivers **to** Gilbert Bay of **the Great Salt Lake GSL. [2006]**	Contractor suggestions to timing for this project are requested.	Contractor – To be determined	Mass balance calculations.
Project 4. Develop a selenium transfer/flux model between the sediments and water column [2006]	Contractor suggestions to timing for this project are requested.	Contractor – To be determined	Literature review and procedure for speciation if necessary.

Preliminary Guidance for Development of SOI

Project 1a. Determine ambient selenium concentrations in water, brine shrimp, brine flies, and bird eggs. Determine stomach contents of nesting birds.[2006]

- DNR/DWR to hire an intern to compile historic nesting and bird survey data.
- Locate foraging and nesting birds around the GSL
    - Species of interest: Avocets, stilts, & other species as directed by the Science Panel.
    - Collect eggs
        - Analyze eggs for Se
        - During 1st clutch nesting
- Utilize appropriate methodology, e.g., air surveillance, off-shore, on-shore
- Place on the November 2005 USGS Map of the Southern Great Salt Lake

Project 1b. Concurrently conduct selenium sampling and analysis of bird eggs water, brine shrimp, brine flies, bird stomach contents.

- Determine distance from nesting sites for appropriate feeding
- Coordinate with bird nesting, egg gathering effort

Project 2. Design and conduct a selenium concentration synoptic surveys in the water and brine shrimp within Gilbert Bay [2006]

- Water chemistry, brine shrimp, and brine flies
- Several sampling periods to be determined
- Utilize Science Panel methodology recommendation (Hydride generation)

Project 3. Determine selenium loadings from point sources and rivers to Gilbert Bay of the Great Salt Lake GSL. [2006]

- Rivers & point sources
  - Upstream and downstream of wetlands
    - Coordinate with Farmington Bay program
- Through the causeways

Project 4. Develop a selenium transfer/flux model between the sediments and water column [2006]

- Conduct literature review to find flux constants
- Test developed model against empirical data
  - Recommend sampling program to develop empirical data, if necessary

Deliverables

Reports to be delivered will be determined by NDSD in consultation with the Division of Water Quality.

Additional Elements

Element 1. Report Preparation.

Reports to be prepared in hard copy and electronically, which contains all tabulated data, a summary of statistical methods and indices used or developed and appropriate graphics including literature citations.

Element 2. Meetings.

Participate in Great Salt Lake Science Panel meetings; present results, methods appropriateness, sensitivity of metrics/statistics used, etc. Assist in revising overall work plan for additional needed work. Participate in Great Salt Lake Steering Committee meetings as requested.

SOQ/SOI Content

Each SOI/SOQ shall not exceed **10 typed pages (not including resumes)** and contain at a minimum, the following elements:

Identification of the firm/organization and qualifications
- -Name of firm/organization
- -Office location (s)
- -Description of firm's general background and capabilities

Experience information
- -Description of specific projects associated hyper saline environments

Description of the proposed project team
- -This element shall include a detailed description of staff that will work on the project, including their academic and professional credentials. Any sub-contractors that will be utilized must also be identified along with their credentials.

Description of submittal package
- Hard copy of submittal package: 3
- Pdf file of submittal package (CD): 1

Key dates

Proposal Due Date and Time: **January 18, 2006 @ 3:00 p.m.**
Notification of Contract Award : **Approximately January 25, 2006**
Project start date: **February 1, 2006**
Project completion date: **December 31, 2006**

Contract Administration Contact:

Mr. Kevin Cowan, Dist. Manager
North Davis Sewer District
P.O. Box 704
Layton, UT 84041
kcowan@ndsd.org
801-825-0712

Late proposals will not be considered.

Technical Contact:

William O. Moellmer, Ph.D.
Utah Division of Water Quality
801-538-6329
wmoellmer@utah.gov